REMARKS/ARGUMENTS

In the office Action, the Examiner rejected claim 16 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctively claim the subject matter regarded as the invention. It is respectfully requested that the Examiner withdraw this rejection. In addition, claims 1, 3, 4, 6, 7, 9 and 14 have been amended to clarify the subject matter regarded as the invention

The Examiner has found claims 4-7 and 13 to recite allowable subject matter. Claim 4 has been presented in an independent form. Accordingly, it is respectfully submitted that claim 4 and its dependent claims are in condition for early allowance.

However, claims 1, 2, 8, 18, 19 and 20 have been rejected by the Examiner under U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,003,038 (*Chen*) and claims 3, 9-12 and 14-17 under U.S.C. 103 (a) as being obvious over *Chen* in view of U.S. Patent No. 6,093,216 (*Adl-Tabatabi et al.*). These rejections are fully traversed below.

The present application pertains to storing and retrieving field descriptors in Java™ computing environments are disclosed. In accordance with one aspect of the invention, a reference identifier can be provided. Typically, the reference identifier is associated with a Java™ object and can be used to determine whether various fields of the Java™ object are a reference to another Java™ object. The reference identifier can, for example, be represented as an internal class representation in a virtual machine when a Java™ classfile is loaded into the virtual machine. As will be appreciated, the reference identifier can be used at runtime to quickly determine whether a field of the associated Java™ object is a reference to another Java™ object. As a result, the runtime performance virtual machines, especially those operating with limited resources (e.g., embedded systems) can be improved. (Please see, for example, Abstract of the Invention.)

As a representative claim, claim 1 pertains to an internal class representation suitable for use by a Java™ virtual machine in a Java™ computing environment. The internal class representation includes a reference identifier with one or more entries, such that each of the entries correspond to a field of a Java™ object. Furthermore, each of the one or more entries of the reference identifier can be used to indicate

whether a corresponding field of the Java™ object is a reference to another Java™ object (Claim 1).

In the Office Action, the Examiner has asserted that *Chen* teaches a reference identifier in the context of the claimed invention (Office Action, paragraph 4, pages 2-3). It is noted that *Chen* states that a schematic block diagram illustrates an object-oriented processor connected to a memory. The object-oriented processor functions on an object-oriented basis of a class structure that is defined in terms of a memory layout. With the defined class structure, the object-oriented processor derives a class pointer and uses the class pointer to create objects as instances of classes and execute the created objects. A class pointer may be derived for each creation of an object or stored for efficient multiple instantiation of objects (*Chen*, Col 4, lines 35-45). It should, however, be noted that *Chen* illustrates a processor that is used to process a class structure. A processor is NOT an internal class representation. Clearly, the filed array 302 illustrated in Fig. 3 and 306 represent a class structure that can be processed by a processor (*Chen*, Col 5, lines 43-53). Accordingly, it is respectfully submitted that the Examiner's rejection is improper and should be withdrawn for at least this reason.

Furthermore, it is respectfully submitted that the Examiner's rejection is improper for additional reasons. Contrary to the Examiner's assertion, the field array 306 of *Chen* does not teach one or more entries that each point to a field of a Java™ class. The field array 306 of *Chen* points to information that is not a field of a Java™ object (e.g., class Ptr 504, signature 504, name 508, and access 510). Instead, a field of an object can be accessed by using the reference object 502. Clearly, *Chen* does not teach a reference identifier with one or more entries, such that each of the entries correspond to a field of a Java™ object. *Chen* teaches a field array entry that includes various fields of a class, namely, an object 502, a class Ptr 504, a signature 504, a name 508, and access 510. Accordingly, it is respectfully submitted that the Examiner's rejection is improper and should be withdrawn for additional reasons.

Still furthermore, it is respectfully submitted that the Examiner's rejection is improper for yet additional reasons because *Chen* does not teach that each of the one or more entries of the reference identifier can be used to indicate whether a corresponding field of the Java™ object is a reference to another Java™ object. It is noted that *Chen* states that a third entry in the field array 306 is a signature field that describes the type of the field entry (*Chen,* Col. 8, lines 1-2). However, contrary to the

Examiner's assertion, it is earnestly believed that the signature field in itself cannot be used to indicate whether a corresponding field of the Java™ object is a reference to another Java™ object. Moreover, the claimed invention recites that each of the one or more entries of the reference identifier can be used to indicate whether a corresponding field of the Java™ object is a reference to another Java™ object. Clearly, *Chen* does not teach each of the field entries: object 502 , a class Ptr 504, a signature 504, a name 508, and access 510 to be implemented to indicate whether a corresponding field of the Java™ object is a reference to another Java™ object.

Independent claims 9, 14 and 18 recite similar features as those discussed above with respect to claim 1. Accordingly, it is respectfully submitted that claims 1-20 are patentably distinct over the cited art of record. Additional limitations recited in the independent claims, or the dependent claims, are not further discussed because the limitations discussed above are sufficient to distinguish the claimed invention from the cited art. Accordingly, Applicant believes that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner.

Applicants hereby petition for an extension of time which may be required to maintain the pendency of this case, and any required fee for such extension or any further fee required in connection with the filing of this Amendment is to be charged to Deposit Account No. 500388 (Order No. SUN1P834). Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
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